From Dioxin Source to Long-Term Biological Consequences

A New Information Framework for Reconstructing Wartime Contamination

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Slide 1 Opening

Speaker text · 0:00–0:53

This session brings together different locations, histories and forms of evidence concerning contamination and its consequences. Its variety gives us a scientific opportunity. We can ask how the individual accounts contribute to investigation of the developing process and what information we need to connect them responsibly.

Our published abstract proposes reconstruction across sources, environmental pathways and long-term biological outcomes. This presentation gives that proposal an operational direction. We will build comparable models of particular cases, preserve the evidence behind their relationships and identify a useful next investigation. [1]

This is a methodological proposal for project preparation. Its value will depend on what an initial application allows us to establish, reject or formulate more precisely. I will conclude with a concrete task for Saturday's project work.

Slide 2 Individual cases and the developing process

Speaker text · 0:53–2:00

A detailed case can establish important facts about a particular territory. The next question concerns how those facts belong together and what can be learned by comparison with another case. We need to distinguish a shared chemical label from a demonstrated similarity in the organisation of the process.

The conversation with Kenneth Olson already directs attention towards long-term environmental interactions and exposure pathways. We should build on this process perspective. The task is to give different investigations a common structure for examining their connections and limits. [2]

We therefore propose asking every case the same initial questions. What source is under consideration? Which historical period and territory does the reconstruction cover? Which relationships have evidence? Which remain proposed? What conditions might account for a different trajectory elsewhere?

These questions preserve the specificity of each case while making a comparison possible. A manufacturing location and a wartime application territory may contribute to the same wider inquiry without becoming interchangeable examples.

Slide 3 Morphology as the organisation of change

Speaker text · 2:00–3:05

The work on the morphology of military contamination addresses the transition from events to process understanding. It treats morphology as the organisation of change, examined through comparison and modelling. Models of particular cases can reveal recurring relationships while retaining their limits of application. [3]

For this project, we propose comparing the spatial arrangement of sources and receiving environments, the timing of observations and the relationships between environmental conditions and possible exposure. These comparisons would help formulate questions about why trajectories differ.

Morphological description and causal explanation have different tasks. We may identify a pattern before knowing which mechanism accounts for it. The Scientific Recognition Architecture allows us to develop the description and test explanatory possibilities while the object remains incompletely understood. [4]

The practical requirement is an inspectable relationship between the representation and the evidence. A proposed form of the process must tell us what to investigate and what finding could require its revision.

Slide 4 A reconstruction with several possible pathways

Speaker text · 3:05–4:10

The title suggests a path from a source to biological consequences. As a research design, we propose representing that path through several possible relationships, including branches and unresolved connections.

Consider an illustrative case. Documents identify an activity involving a relevant chemical product. Later observations exist in a nearby environmental compartment. The team proposes a connection, but the location match, period and pathway need examination. Another source or a later activity may provide an alternative account.

We would preserve the documented activity separately from the proposed environmental link. We would then ask what maps, records or measurements could distinguish the alternatives. A possible exposure relationship would enter the reconstruction as another claim requiring its own grounds.

This example reports no particular finding from Vietnam or another session case. It shows how the framework turns an attractive narrative into separate research questions. A connection acquires support through its examination. An unavailable check remains an explicit gap.

Slide 5 Comparable models of particular cases

Speaker text · 4:10–5:18

Our proposed unit of comparison is a model of a particular case. It identifies the territory, period and methodology, following the model specification requirements in the morphology work. [3]

For implementation, each model would also preserve the chemical information actually available. A broad product name cannot silently substitute for a measured composition. A case concerning co-contaminants must retain that scope when compared with a case whose measurements cover a narrower set of substances.

We would compare relationships that the evidence permits us to examine. Two cases might both contain an unresolved connection between a historical source and later observations. The questions needed to resolve that connection could nevertheless differ because the documents, territorial conditions and analytical coverage differ.

The comparison should record both similarity and the reason for a limit. It may suggest a candidate process pattern. Testing its scope requires further cases and discriminating evidence. We should preserve cases that challenge the preferred account and explain any exclusion from the comparison.

Slide 6 Evidence status at every connection

Speaker text · 5:18–6:24

The information framework requires a record for each consequential connection. We propose identifying the source, the claim extracted from it, the checking procedure and the current evidential status. The related contribution on evidence status supplies the working distinctions. [5]

A document may report an activity without supplying its precise location. A researcher may propose a coordinate through historical interpretation. AI may suggest that two names refer to the same place. These contributions must remain distinguishable, and the accepted interpretation must have an identifiable reviewer.

We also check whether several statements depend on one original source. Repetition can otherwise appear to be independent confirmation. A contradiction should remain available alongside the interpretation it challenges.

The practical output is a set of questions that can be addressed. We need another document, a location check, an environmental observation or a different specialist assessment. Where no available action can settle a connection, we preserve that limitation and its consequences for the conclusion.

Slide 7 The history of a changing territory

Speaker text · 6:24–7:31

The environmental object continues to develop while its history is reconstructed. Our working account must therefore identify the time represented by each observation and the conditions relevant to its interpretation.

The phrase dioxin jazz is our metaphor for the particular trajectory that follows an intervention in a territory. It directs attention towards interactions and changing configurations. Its research value depends on translating that idea into questions with identifiable evidence.

For a candidate area, we would ask which changes in drainage, land use or remediation might matter to the proposed pathway. We would seek records of those changes and determine whether they alter the relevance of earlier observations. These are questions to investigate, rather than assumptions that every change has increased exposure.

We must also distinguish a revised description from a changed environmental process. A corrected coordinate changes our representation. An altered water connection concerns the object. The record should state which change occurred and the grounds for that assessment.

Slide 8 Vietnamese archives as an initial work package

Speaker text · 7:31–8:41

The Vietnamese archival contributions identify relevant groups of records at National Archives Centers II and III. They provide a starting point for selecting material and discussing its use. Access and the availability of particular documents must be established for the proposed project. [6, 7]

We propose a limited initial corpus connected with one territory or historical question. The team would retain document identifiers and distinguish the original wording from transcription, translation and interpretation. Significant place names and dates would receive explicit checking.

The aim would be to determine what the records can support about a candidate activity, period or location. We would then identify what environmental relationships require independent verification. Archive analysis may justify further investigation. It may also show that a proposed match is unsupported.

The first work package can therefore produce a useful result before a field campaign. It creates a checked historical basis, a set of alternatives and a reasoned question for the next phase. Its scope should match the material and expertise actually available.

Slide 9 Biological consequences as a separate research task

Speaker text · 8:41–9:48

The final part of the reconstruction concerns biological and health observations. We must state exactly which connection we are investigating and what evidence could support it.

Our proposed framework would separate an environmental measurement, an exposure assessment and an observed biological outcome. It would preserve the population or organisms studied, the period, the methods and the limitations reported by the relevant specialists. These distinctions prevent one kind of result from acquiring the authority of another.

A later-generation observation does not, by itself, establish an inherited effect from wartime contamination. Exposure histories, alternative explanations and the study design require independent examination. We should formulate these as distinct research questions rather than treat the entire pathway as already demonstrated.

This requirement keeps biological expertise integral to the project. The information system organises the relationships between findings and questions. Specialists assess the scientific grounds of the consequential links. The related field-verification contribution makes this separation part of the proposed research standard. [8]

Slide 10 The expert–AI system in reconstruction

Speaker text · 9:48–10:55

AI has a substantial role in the proposed workflow. It can assist comparison across documents, languages and disciplinary accounts, help identify incompatible descriptions and develop alternative formulations of an unresolved relationship. The related scientist–AI series develops this working arrangement in detail. [9]

For our pilot, participants would give AI a defined task and usable source context. They would distinguish extraction from interpretation and ask which evidence would challenge a suggested connection. Consequential passages and interpretations would receive expert checking.

The team would preserve significant revisions, including rejected suggestions and the grounds for accepting an interpretation. Fluent text and rapid production would not settle the evidential status of a reconstruction.

We should evaluate AI through the work it helps accomplish. Did it reveal a naming error? Did comparison expose source dependence? Did the discussion produce a more discriminating observation? Time spent checking unsuccessful output belongs in the assessment. Training participants in this procedure is part of preparation for implementing the project.

Slide 11 A common record for interdisciplinary work

Speaker text · 10:55–12:02

The two laboratories provide complementary functions for the proposed project. The Laboratory of Information Systems organises sources, evidence assessments and the history of decisions. The Laboratory of Military Ecotones develops the description of the environmental process and its verification priorities. [9]

For implementation, the team must identify the people responsible for each task and the partners required for specialist work. Laboratory names declare organisational functions. Project records must show who performed and checked the operations.

Integration occurs when a finding changes another part of the inquiry. An archival correction can alter the justification for a site. An environmental result can require another examination of a historical interpretation. A biological study can identify an exposure question the existing environmental record cannot answer.

The common record preserves those consequences. It allows participants to explain a decision across disciplinary boundaries and gives the next investigator a starting point beyond the final narrative alone. This is how information organisation can support cumulative understanding.

Slide 12 Saturday work on one bounded case

Speaker text · 12:02–13:11

Saturday can begin with a bounded application of this proposal. Participants would select one case for which material and appropriate expertise are available. A Vietnamese archival pilot is a potential starting point, subject to agreement on the corpus and access.

The group would state one consequential research question and draw up a preliminary account of the proposed relationships. For each connection, it would list the supporting material and the remaining uncertainty. It would preserve plausible alternatives that matter to the next decision.

The group would then choose one check capable of distinguishing those alternatives or resolving a significant gap. That check might involve another document, a spatial reconstruction or the design of an environmental observation. The choice should follow the question and the available resources.

Finally, participants would identify who can perform and assess the task, what access is required and which outcome would justify changing direction. This produces a concrete first work package. It avoids presenting an initial workshop as a completed investigation.

Slide 13 The output of the first work package

Speaker text · 13:11–14:18

The proposed first work package should leave a small set of usable outputs. It produces a preliminary case model whose sources and limits can be inspected. It identifies the relationship that requires the next investigation and the alternatives that the task is intended to distinguish.

The task specification states the people responsible, the necessary competence and access, and the resources currently available. It also states what cannot yet be investigated. A significant question remains in the record even when the pilot lacks the means to answer it.

The group preserves the initial model and the reasons for its subsequent changes. Later work can then compare the result with another case without losing its territory, period or methodology.

We will judge progress through a corrected interpretation, a rejected connection, a justified verification design or a better-supported relationship. These outcomes give the programme a basis for continuation and evaluation. They also show what the first application has changed in our understanding.

Slide 17 A first step towards process understanding

Speaker text · 14:18–15:00

The cases presented in this session can supply material for a common research task. We propose making their models comparable while preserving the evidence and conditions that give each case its meaning.

Morphological inquiry asks how the process is organised and why its trajectories differ. The information framework makes the proposed relationships inspectable. The expert–AI system helps develop questions and organise checking under explicit responsibility.

Our next step is a limited application. On Saturday, we can select a case, formulate a question and specify one useful investigation. The result should leave us with a clearer account of the process and a concrete basis for continuing the work.

References

[1] Laboratory of Information Systems. 2026. From Dioxin Source to Long-Term Biological Consequences: A New Information Framework for Reconstructing Wartime Contamination. Pollution and Diseases. DOI 10.66659/62p3b908 https://pollution-diseases-ojs.org/index.php/pd/article/view/70

[2] Editorial board. 2026. Agent Orange Environmental and Human Health Impacts of Herbicide Use During and After the Vietnam War (A Conversation with Kenneth R. Olson). Pollution and Diseases. DOI 10.66659/8wa9z016 https://pollution-diseases-ojs.org/index.php/pd/article/view/49

[3] Nikolaenko, Dmitry. 2026. From Individual Events to the Morphology of Military Contamination: An Epistemological Study of Form, Process, and Morphogenesis. Pollution and Diseases. DOI 10.66659/resz8h58 https://pollution-diseases-ojs.org/index.php/pd/article/view/32

[4] Nikolaenko, Dmitry. 2026. From Scientific Recognition to Scientific Explanation: Organising Investigation of Long-Term Military Environmental Contamination. Pollution and Diseases. DOI 10.66659/db5ekw49 https://pollution-diseases-ojs.org/index.php/pd/article/view/58

[5] Laboratory of Information Systems. 2026. Evidence Status and Pathological Uncertainty: A Working Standard for War Contamination Information. Pollution and Diseases. DOI 10.66659/z0wwf379 https://pollution-diseases-ojs.org/index.php/pd/article/view/78

[6] Vu Thi Phung, Vu Dinh Phong, and Nguyen Van Ngoc. 2026. Archival records at National Archives Center III on the use of chemical agents during the Vietnam War: value and accessibility. Pollution and Diseases. DOI 10.66659/xnkh0w22 https://pollution-diseases-ojs.org/index.php/pd/article/view/99

[7] Cu Thi Dung and Vu Dinh Phong. 2026. Archival sources of the Government of the Republic of Vietnam at National Archives Center II on chemical defoliants during the Vietnam War. Pollution and Diseases. DOI 10.66659/zdcj2c76 https://pollution-diseases-ojs.org/index.php/pd/article/view/100

[8] Laboratory of Military Ecotones. 2026. Field Verification in the Scientist–AI System: From Pathological Uncertainty to Quality Data. Pollution and Diseases. DOI 10.66659/2qwv2037 https://pollution-diseases-ojs.org/index.php/pd/article/view/79

[9] Nikolaenko, Dmitry. 2026. The Scientist–AI Research System: An Integrated Working Standard for War-Related Environmental Contamination. Pollution and Diseases. DOI 10.66659/1cabcy23 https://pollution-diseases-ojs.org/index.php/pd/article/view/80